

OCT. 20. 2004 3:58PM

SCHLUMBERGER

NO. 383 P. 1

Sugar Land Product Center
200 Gillingham Lane
Sugar Land, Texas 77478
(281) 285-7325
(281) 285-4232 Fax

Schlumberger

Fax message

To **Examiner Vargas**

Location

USPTO

cc

Fax

(703)872-9306

From

Kevin McEnaney 

Date

October 20, 2004

Subject

**Serial No: 10/604,869
Our File: 20.2873**

Pages (inc)

3

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Chanh Cao Minh, et al.

Serial No.: 10/604,869

Filed: August 22, 2003

For: Interpretation Methods for NMR Diffusion-
T2 Maps

Group Art Unit: 2859

Examiner: D. Vargas

Atty. Dkt. No.: 20.2873

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Kevin M. Ensey

Date

10/20/2004

RESPONSE TO RESTRICTION REQUIREMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Madam:

This paper is submitted in response to the Office Action mailed September 24, 2004. Reconsideration and modification of the restriction requirement is respectfully requested in light of the following remarks.

The Office Action states that the inventions of Specie I - IV constitute patentably distinct subject matter. However each of the independent claims 1, 9, 17 and 26 are embodied within the single Specie I. Dependent claims address the remaining Specie II-IV. Applicants traverse the restriction requirement, provisionally electing to prosecute the Specie I, claims 1-8, 17-31.

According to MPEP section 803, an application may properly be required to be restricted under 35 U.S.C. § 121 only if the claimed inventions are able to support separate patents and they are either independent or distinct. Disclosed subjects are independent from each other if they are unconnected in design, operation, or effect (MPEP sec. 802.01). Distinction between disclosed subjects is found when they are related, but are capable of separate manufacture, use, or sale, and are patentable over each other (MPEP sec. 802.01). Further, even if an application includes claims to independent or distinct inventions, it must be examined on the merits unless a serious burden is presented (MPEP sec 803).

Independent claims 1, 9, 17 and 26 are neither independent nor distinct from each other. All of the claimed inventions in these groups are connected in design and operation. The claimed inventions of claims 1, 9, 17 and 26 all share similar operating steps, namely obtaining a set of NMR data for a fluid sample, computing from the set of NMR data a multi-dimensional distribution, displaying the multi-dimensional distribution and identifying at least one fluid instance. The difference among the claims is the last steps of the each respective claim. However the last step of claim 1 embodies the last steps of claims 9, 17, and 26.

Namely, patentability of the independent claims over each other is also questionable. For example, the last step of claim 1 defines computing a quantitative formation evaluation value for the at least one fluid instance based on the multi-dimensional distribution associated with the at least one fluid instance. The last steps of claim 9 defines applying a fluid response model to calculate quantitative formation evaluation values of the fluid sample, the fluid response model being based on the at least one fluid instance. The last steps of claim 17 defines integrating over a region of the graph associated with the at least one fluid instance to obtain a total amplitude and then computing quantitative formation evaluation values associated with the at least one fluid instance using the total amplitude. The last steps of claim 26 defines computing a mean value across a region of the distribution associated with the at least one fluid instance and then computing a quantitative formation evaluation value based on the computed mean value. The last claim step of claim 1 would arguably anticipate or render obvious the last steps of claims 9, 17 and 26.

It is more likely than not that any search for the inventions of claims 1, 9, 17 and 26 include a search for art comprising NMR measurement interpretation techniques to determine quantitative formation evaluation values. The fact that claims 9, 17, 26 specify how the quantitative formation evaluation values are to be determined from the graph, does not create non-analogous subject matter. Thus Applicants submit that a search for the inventions of the stated claims does not present a serious burden.

Therefore, reconsideration of the restriction requirement and substantive examination of the claims in the application is respectfully requested. The Examiner is invited to contact the undersigned attorney at 281-285-7325 with any questions, comments or suggestions relating to this patent application.

Respectfully submitted,

Date: 10/20/04

Schlumberger Technology Corporation
200 Gillingham Lane
Sugar Land, TX 77478

Kevin McEnaney, Reg. No. 46, 258
Telephone: 281-285-7325
Facsimile: 281-285-4232

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